RIEMANNIAN CONNECTIONS ON SUPERMANIFOLDS: A COORDINATE-FREE APPROACH

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Dedicated to Ştefan Cobzaş, at his 60th anniversary

Abstract. We prove that on any Riemannian supermanifold with a homogeneous (even or odd) metric there exists a single symmetric connection, compatible with the metric and there is provided an explicit global formula for it, without using a coordinate system.
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Key words. Riemannian supermanifolds, Riemannian connections.

REFERENCES

[1] Bartocci, C., Bruzzo, U. and Hernández-Ruiperez, D., *The Geometry of Super-manifdolds*, Kluwer, 1992.

[2] Bejancu, A., *A New Viewpoint on Differential Geometry of Supermanifolds (I)*, Universitatea din Timişoara, Facultatea de Matematică, Seminarul de Mecanică, **29** (1990).

[3] Bejancu, A., *A New Viewpoint on Differential Geometry of Supermanifolds (II)*, Universitatea din Timişoara, Facultatea de Matematică, Seminarul de Mecanică, **30** (1991).

[4] Berezin, F.A. and Leites, D.A., *Supermanifolds*, Dokl. Akad. Nauk SSSR, **24** (1975), 505–508.

[5] DeWitt, B., *Supermanifolds*, Cambridge University Press, 1984.

[6] Kostant, B., *Graded Manifolds, Graded Lie Theory and Prequantization*, in : *Differential Geometric Mathods in Mathematical Physics*, K. Bleuer and A. Reetz (eds.), Lecture Notes in Mathematics, **570** (1977), Springer Verlag, pp. 177–306.

[7] Leites, D.A., *Introduction to the Theory of Supermanifolds*, Russian Math. Surveys, **35** (1980), no. 1, pp. 1–64.

[8] Manin, Yu., *Complex Geometry and Gauge Theory*, Springer Verlag, 1988.

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